available on the Mexican Formulary Catalog (naproxen/esomeprazole, NSAIDs group and celecoxib). Incremental cost-effectiveness ratio (ICER) was performed with two measures: Life Years without AE (LY) and Quality Adjusted Life Years (QALYs). The analysis was done from public perspective, only considered direct costs, and is reported in US dollars. **RESULTS:** Treatment with naproxen/esomeprazole versus NSAIDs represents an ICER of $318.85 for one year without AE; celecoxib had an ICER of $1,226.59, less effective than naproxen/esomeprazole. The ICER per QALY gain was $1,363.26 for naproxen/esomeprazole and $4,562.90 for celecoxib. Sensitivity analysis confirms the consistency of the results. **CONCLUSIONS:** Naproxen/esomeprazole FDC dominated celecoxib and NSAIDs. The use of naproxen/esomeprazole in the treatment of patients with OA at risk of developing GI AE is cost-effective and could be considered as the first option in an institutional setting.

**PMS40**

**THE ECONOMIC VALUE OF AN INNOVATIVE KNEE IMPLANT SYSTEM FOR TOTAL KNEE ARTHROPLASTY**

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**OBJECTIVES:** New Innovative Knee Implants (IKIs) have the potential to reduce patients' awareness of the artificial knee, increase their confidence in performing daily activities, and reduce problems leading to revisions compared with Contemporary Knee Implants (CKI). This study aimed to illustrate the expected economic value of a new IKI among osteoarthritis (OA) patients requiring total knee arthroplasty (TKA). **METHODS:** A Markov model was developed to explore the cost-effectiveness of the IKI compared with CKIs among OA patients undergoing TKA from a United States payer perspective. The model design distinguished between the IKI and CKIs in terms of functional status and implant survivorship. CKI survivorship was estimated using patient-level survivorship data with SIGMA fixed bearing knees from the United Kingdom National Joint Registry. To estimate IKI survivorship, the approach used by Suter et al. (2011) was adopted. Adjustments were made to the risk of revision for causes addressed in the design of the IKI, specifically, wear, loosening, pain, instability, patella maltracking, and stiffness. Costs and utilities associated with various health states were literature based. **RESULTS:** The model predicts that the IKI will reduce revisions by nearly 20% and that this improvement in survivorship will translate to economic savings. Additionally, independent of survivorship, improvements in patient functioning will result in economic value. The IKI is expected to be cost-neutral with improved health, when restricting the expected benefit to survivorship only, or to be a therapy that both improves health and reduces costs when functional improvements are also considered. **CONCLUSIONS:** Although TKA can be a successful intervention, there is still potential for IKIs to provide clinical and economic value. Further investigation to quantify the link between improvement in IKI design features and clinical outcomes is necessary to improve the understanding of potential IKI clinical and economic benefits.

**PMS41**

**COST-EFFECTIVENESS OF DENOSUMAB IN THE TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS (PMO) WOMEN IN MEXICO AT HIGH RISK OF FRACTURES AND INTOLERANT TO ORAL BISPHOSPHONATES**

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**OBJECTIVES:** The aim of the study was to evaluate the cost-effectiveness of denosumab (60 mg every 6 months) in the treatment of postmenopausal osteoporosis (PMO) women in México at high risk of fractures and intolerant to oral bisphosphonates. **METHODS:** The study was conducted from the public payer perspective using the comparators of raloxifene (60 mg daily) and teriparatide (20 mcg daily). High risk was defined as having 2 of the following 3 risk factors: Age ≥70 years, T-score ≤-3 or previous fracture. Life years gained (LYG) were the effectiveness measure used in the model. The model reported the weighted Incremental Cost-effectiveness Ratio (ICER) for 3 possible scenarios: 1) Age ≥70 years and T-score ≤-3, without previous fracture; 2) Age ≥ 70 years with previous fracture; 3) T-score ≤-3 with previous fracture. A Markov model was performed using a lifetime horizon and 5 years of treatment. The Diagnoses-Related Groups costs reported by Mexican Institute for Social Security (IMSS) for Mexico were used for different types of fractures. A discount rate of 5% was used for costs and health outcomes. The costs were reported in 2011 Mexican pesos. **RESULTS:** According to the average results for the 3 scenarios, the costs are $199,546 pesos for raloxifene, $202,969 pesos for denosumab and $269,304 pesos for teriparatide. The incremental cost per LYG with denosumab in comparison with raloxifene is $42,775 Mexican pesos and $-941,995 Mexican pesos versus teriparatide. **CONCLUSIONS:** Denosumab is a cost-effective alternative versus raloxifene because the ICER is 22% below to 1 GDP per capita (local cost-effectiveness threshold). Also, denosumab can be considered a cost-saving alternative versus teriparatide because it reduces costs and increases clinical benefits in the treatment of PMO women in Mexico at high risk for fracture and intolerant to oral BPs.

**PMS42**

**COST-UTILITY ANALYSIS OF TOCILIZUMAB IN THE TREATMENT OF ACTIVE SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS**

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**OBJECTIVES:** Systemic idiopathic juvenile arthritis (sJIA) is a subtype of juvenile idiopathic arthritis (JIA), characterized by systemic manifestations of disease in addition to arthritis leading to significant patient morbidity, caregiver burden, and health care costs. The TENDER study demonstrated that treatment with tocilizumab resulted in a significant benefit over placebo. The objective of this study is to determine the cost-effectiveness of tocilizumab with or without methotrexate compared to placebo with methotrexate for the treatment of sJIA. **METHODS:** A Markov model was developed to capture time spent by patients in various health states, which included: no American College of Rheumatology (ACR) Response (uncontrolled), ACR Response 30, 50, 70, 90, and Death. Results were reported as incremental cost per additional quality adjusted life-years (QALY) gained, over a 16-year period (from age 2-18 years). Transition probabilities were derived from the TENDER study and published literature. The base case analysis focused on direct medical costs only from the perspective of the Canadian Ministry of Health (MoH). A second analysis was conducted from the societal perspective. Cost data were obtained from a variety of sources and reported as 2011 Canadian Dollars. A 5% discount rate was applied to both costs and patient outcomes. Multiple sensitivity analyses were undertaken to test the robustness of the model. **RESULTS:** From the MoH perspective, tocilizumab with or without methotrexate had an incremental cost-utility ratio (ICUR) of $69,787 per additional QALY gained compared to placebo with methotrexate. The treatment with tocilizumab would be the dominant (less costly and more effective) treatment strategy from the societal perspective. Results were robust over a wide range of sensitivity analyses tested. **CONCLUSIONS:** Tocilizumab with or without methotrexate is a cost-effective strategy compared to placebo with methotrexate for patients with sJIA.

**PMS43**

**COMPARISON OF COST PER QALY (QUALITY-ADJUSTED LIFE YEAR) FOR MAJOR TYPES OF CANCERS, END-STAGE RENAL DISEASE AND RHEUMATOID ARTHRITIS IN TAIWAN: A POPULATION-BASED STUDY DURING 1998-2007**

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**OBJECTIVES:** This study determines the lifetime survival function, utility function and health care expenditure for 8 types of cancer, end-stage renal disease (ESRD) and rheumatoid arthritis (RA) stratified by gender and age in Taiwan, and provides data to estimate cost-per-QALY for comparison. **METHODS:** A total of 335,918 pathologically verified cancer patients registered in the National Cancer Registry of Taiwan during 1998-2007, and 125,277 ESRD patients and 39, 455 RA patients registered under "catastrophic illnesses" were included. All of them were followed until the end of 2010 to obtain the survival function, which were further extrapolated to lifetime based on a semi-parametric method using the age- and sex-matched referents simulated from the life tables of the National Vital Statistics of Taiwan. The survival functions were adjusted using an EQ-5D utility value derived from a convenience sample of 8,421 patients to estimate quality-adjusted life expectancies (QALE). The monthly health care expenditures attributable to different cancers, ESRD and RA were collected from the reimbursement database of the National Health Insurance (NHI). These values were multiplied by the corresponding survival probabilities to calculate the lifetime health care expenditure after adjusting consumer price indices for different calendar year up to 2010 and assumed a 3% discount rate later on. **RESULTS:** ESRD had the highest life-time health care expenditure and cost-per-QALY, followed by RA and cancers, which is 16,933 to 17,851 U.S. dollars (USD) of cost-per QALY, or about one GDP (gross domestic products) of Taiwan. Of the 8 different cancers studied, the lung cancer, esophagus cancer and liver cancer had the highest cost-per-QALY. There appears a trend of shorter life expectancy or QALY associated with higher cost-per-QALY. **CONCLUSIONS:** Such estimates of cost-effectiveness are an essential part on the consideration to accommodate new health technology in cancer and other chronic diseases control, including prevention.

## MUSCULAR-SKELETAL DISORDERS – Patient Reported Outcomes & Patient Preference Studies

**PMS44**

**ASSOCIATION BETWEEN RITUXIMAB ADHERENCE AND ORAL GLUCOCORTICOID USE IN RHEUMATOID ARTHRITIS PATIENTS WITH PRIOR EXPOSURE TO ANTI-TUMOR NECROSIS FACTOR-ALPHA THERAPY**

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**OBJECTIVES:** Oral glucocorticoids (OGCs) have therapeutic benefits in rheumatoid arthritis (RA), but can produce adverse effects. This study examined the association between rituximab adherence and OGC use reduction in RA patients. **METHODS:** Retrospective study using a large U.S. claims database. Patients included for study had initiated rituximab between March 1, 2006-March 31, 2011 (initiation date=index), had pre-index exposure to anti-tumor necrosis factor-alpha (anti-TNF) therapy, were aged ≥18 years, had a medical claim with a diagnosis code for RA (ICD-9-CM 714.0x) between January 1, 2004-March 31, 2011, were continuously enrolled for 12 months before and ≥270 days after index, and had OGC use ≤30 days before index. Patients were excluded if they had medical claims with diagnosis codes for non-RA indications of biologic disease modifying antirheumatic drugs (BDMARDs). Based on rituximab infusion services dates and recommended 6-month reinfusions, rituximab exposure periods were constructed to start upon index and end at the first occurrence of switch to a